



Memorandum Department of Public Works

**TO: Michael O. Geisel, PE
City Administrator**

**FROM: James A. Eckrich, PE *JAE*
Director of Public Works / City Engineer**

DATE: April 8, 2021

Please forward to PPW for review and further direction.

RE: Highcroft Drive

MO Geisel 2022-4-13

As you know, each year the Department of Public Works updates its five-year Capital Projects Plan (CPP). The CPP includes all planned capital projects, from smaller projects like crack sealing and asphalt overlay to large projects such as concrete slab replacement and bridge reconstruction. The vast majority of our projects are City funded, but we also search for grant opportunities whenever possible. Recent grant-funded projects include the Riparian Trail (Ordinance 2997), Appalachian Trail Phase II (Ordinance 2734), Greentrails Drive South (Ordinance 2751), Ladue Road (Ordinance 2750), the Schoettler Road Bridge (Ordinance 2765), the Timberlake Manor Bridge (Ordinance 2661), and the Chesterfield Parkway East Pedestrian Bridge (Ordinance 2850). As you know, we are currently trying to secure grant funding for improvements to Wilson Avenue.

In the past, the majority of grant applications with East-West Gateway were road and bridge projects which were evaluated and awarded primarily on the condition of the asset and total cost of the project. This framework allowed the City to leverage existing funds to construct expensive capital projects when the condition warranted replacement. Many of the roads and bridges that the City previously received grants for were originally constructed prior to incorporation of the City. This means the road or bridge had likely met or exceeded its original design life and the condition warranted replacement. In addition, due to the age of the road or bridge, there were often opportunities to improve access for pedestrians and bicyclists as part of the project.

In June of 2015, East-West Gateway adopted a new long-range transportation plan, [Connected2045](#). *Connected2045* established a vision for how the St. Louis Region's transportation system would develop over the next 30 years (2015-2045). The plan outlined ten principles to guide regional transportation decisions, including how all transportation projects using federal funds would be identified. The plan identified strategies for East-West Gateway to make decisions through a performance-based

planning framework. It is my understanding that since adoption of *Connected2045* by East-West Gateway in 2015, the competitive grant programs have been revised and refined to ensure the grant programs are consistent with the ten principles in *Connected2045*. The table excerpt below is from the current STP grant scoring guide.

Table 1: *Connected2045* 10 Guiding Principles

Guiding Principles	Description
(1) Preserve & Maintain the Existing System	Ensure the transportation system remains in a state of good repair.
(2) Support Public Transportation	Invest in public transportation to spur economic development, protect the environment, and improve quality of life.
(3) Support Neighborhoods & Communities	Connect communities to opportunities and resources across the region.
(4) Foster a Vibrant Downtown & Central Core	Improve access to and mobility within the central core by all modes to increase attractiveness of St. Louis and strengthen the regional economy.
(5) Provide More Transportation Choices	Create viable alternatives to automobile travel by providing bicycle and pedestrian facilities.
(6) Promote Safety & Security	Provide a safe and secure transportation system for all users.
(7) Support a Diverse Economy with a Reliable System	Reduce congestion and improve travel time reliability to support the diverse economic sectors of the region.
(8) Support Quality Job Development	Support the growth of wealth producing jobs that allow residents to save and return money to the economy.
(9) Strengthen Intermodal Connections	Support freight movement and connections that are critical to the efficient flow of both people and goods.
(10) Protect Air Quality & Environmental Assets	Encourage investments that recognize the linkages between the social, economic, and natural fabric of the region.

Over the last several years, the grant program through East-West Gateway has become more competitive as all agencies search for funding to meet their needs. Additionally, in accordance with *Connected2045*, while preserving and maintaining the existing transportation system is still important, in order to be competitive in the grant program, projects need to show how they will improve and impact the St. Louis Region and further East-West Gateway’s ten guiding principles beyond simply maintaining the existing system.

By applying for a grant through one of East-West Gateways competitive grant programs, the City can potentially secure eighty percent of the total project cost. The project evaluation, scoring, and award recommendations are complex. Each grant application is unique, and City Engineering staff considers and balances myriad factors in an attempt to submit the best grant application possible in each instance.

There are several areas where the City Council has directed Staff to pursue grant funding whenever possible. These areas include the Pathway on the Parkway Project from Clarkson Road to Schoettler Valley Drive (\$620,000), and the Schoettler Road sidewalk from Windsor Valley Court to Greenleaf Valley (\$1,200,000). For other projects, the City’s Engineering Staff determines the work necessary to maintain our 183 miles of public roadway and 260+ miles of public sidewalk. When one of those

areas qualifies for grant funding, the Engineering Staff assesses the likelihood of grant funding and pursues those grants if appropriate.

I have introduced the topic in this manner in order to specifically discuss Highcroft Drive and a potential future grant application. Highcroft Drive is a minor collector roadway approximately 4,600 feet in length, connecting Old Baxter Road to Schoettler Road. The easternmost 650 feet near Schoettler Road is comprised of asphalt, with the remainder of the road consisting of concrete. The section of Highcroft Drive between Schoettler Road and Schoettler Valley Drive is generally 26-foot wide and the section between Schoettler Valley Drive and Old Baxter Road is generally 38-foot wide. Four-foot wide sidewalks are present on both sides of the road. Highcroft Ridge Elementary is located near the eastern end of the road, the Schoettler Valley Estates subdivision pool is located near the intersection of Highcroft and Schoettler Valley, and Eberwein Park is located just west of the intersection of Highcroft and Old Baxter. Single family homes are present along most of the roadway.

Highcroft Drive is in fair condition but deteriorating, with a rating of 7.5 (on a ten-point scale) based upon the most recent inspection in 2021. Of the approximate 850 total slabs, there are isolated ones with low ratings, including 47 slabs with a rating of six or less. This is typically when a roadway would be programmed into the City's CPP for planning purposes.

Because Highcroft Drive is a classified roadway (Minor Collector) by East West Gateway it qualifies for federal grant funding through the STP program. While potential grant funding is a great opportunity, it also creates questions and problems for the City Staff as it relates to planning for the improvements of this roadway. The current segment rating of 7.5 (with 47 slabs rated 6 or below) is nearing the level that City residents will expect action to be taken. However, if the City acts to improve this roadway outside the scope of a grant, those actions will make it less likely that a future grant application is successful. Additionally, based on past experience and resident feedback, improvements to the roadway that could be beneficial for grant scoring such as bike lanes, traffic calming (bump-ins), and removal of existing unwarranted stop signs, may not be improvements that residents desire.

As stated previously, STP grants are highly competitive and projects are scored on a multitude of criteria that are directly related to East-West Gateway's ten guiding principles. In addition to the performance-based scoring shown in the following table projects are also awarded up to 20 points based on the cost of the project, and 5 points for project usage (based on Person Miles of Travel for the project calculated by East-West Gateway) for a total of 125 available points. The current STP Scoring Guide can be seen in its entirety here - https://www.ewgateway.org/wp-content/uploads/2021/11/STPS_Scoring-Criteria-2022.pdf. As you can see in the following table, the largest scoring category is Road Condition (65 out of a maximum of 100 performance points). The points are further broken down by Paser Rating shown immediately below Table 5. Project cost points are based on the federal funds

requested and the total available funding as can be seen in Figure 2 following the Paser ratings.

Table 2: Project Type and Performance Criteria Values

	STP-S Project Type											
	Road		Bridge		Traffic Flow	Safety	Active Transp	Transit			Freight / Economic Development	
	Within Community	Outside Community	Within Community	Outside Community				Asset Management & System Upgrades	Expansion - Adding Capacity	Expansion - Geographic Expansion	Freight	Economic Development
Guiding Principles												
(1) Preserve & Maintain the Existing System	65	72	65	69	5	8	-	45	-	-	5	5
Multimodal: (2) Support Public Transportation / (5) Provide More Transportation Choices	12	5	9	5	10	10	30	24	64	69	10	10
(3) Support Neighborhoods & Communities	4	4	4	4	4	4	22	8	8	8	4	4
(4) Foster a Vibrant Downtown & Central Core	-	-	-	-	-	-	10	1	1	1	-	-
(6) Promote Safety	8	8	13	13	8	70	35	7	7	7	10	10
(7) Support a Diverse Economy with a Reliable System	1	1	-	-	50	-	-	5	5	5	10	10
(8) Support Quality Job Development	4	4	4	4	5	-	-	-	5	-	-	60
(9) Strengthen Intermodal Connections	5	5	5	5	8	8	-	-	-	-	60	0
(10) Protect Air Quality & Environmental Assets	1	1	-	-	10	-	3	10	10	10	1	1
Total Performance Points	100	100	100	100	100	100	100	100	100	100	100	100
Cost	20	20	20	20	20	20	20	20	20	20	20	20
Usage	5	5	5	5	5	5	5	5	5	5	5	5
Total Points Available	125	125	125	125	125	125	125	125	125	125	125	125

- 60 points** PASER 1.6-4.5 – Includes improvements such as mill and overlay, extensive slab replacement, joint rehabilitation, or full-depth pavement repairs.
- 57 points** PASER 4.6-5.5 – Includes project elements that are primarily focused on preservative treatments and non-structural surface repairs.
- 53 points** PASER 5.6-7.5 – Includes project elements that are primarily focused on preservative treatments, non-structural surface repairs, routine sealing, and minor patching of pavement to prevent further deterioration.
- 40 points** PASER 1.5 or less – Includes full reconstruction of the facility, regardless of pavement condition. Reconstruction may be due to deterioration or deficient design.
- 30 points** PASER 7.6-8.5 – Includes standard roadway maintenance.
- Zero points** PASER 8.6-10 – Includes pavement in new or like-new condition with no maintenance required.

Figure 2:



Given Highcroft’s existing segment rating of approximately 7.5, it would warrant a Road Condition score of 53 points plus 5 points for being located “Within Community” for a total of 58 condition points. Based on my experience, that is likely not enough points to qualify for an STP grant, given the limited number of points for which it otherwise qualifies. This leads to the dilemma of whether we continue to allow the road to deteriorate in order to qualify for additional condition points, whether we should forgo the grant process and fund improvements to Highcroft using funding available within the Capital Projects Fund, or if we should consider other changes to Highcroft that may increase points in other performance-based grant categories. Based on recent project bids, a rough estimate for the reconstruction of Highcroft Drive in today’s dollars is \$1,480,000 (~16,200 square yards of replacement at an estimated \$85/SY and an estimated \$100,000 for sidewalk and ADA ramps). A reasonable grant application would likely request grant funding of approximately \$1,036,000. Accordingly, with a grant this project would likely cost the City \$444,000, whereas without a grant the project would cost the City approximately \$1,480,000.

In addition to the grant / programming challenges delineated above, Highcroft Drive is an excellent example of the impact of ADA requirements on our roadway projects. The section of Highcroft from Old Baxter to Schoettler Valley contains three stop signs. These stop signs are each unwarranted in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and Traffic Engineering principles. Further, these intersections do not contain ADA compliant curb ramps on the northern side of the road. Regardless of whether or not a project to improve these intersections is grant funded, the City will need to make the intersections ADA compliant with Title II.

First, let us assume there are no stop signs and we “only” have to install ADA complaint curb ramps. Below are several photos of the three intersections. As you can see, there are no ramps on the north side of the road. Additionally, the construction of ramps will appear to be in residents front yards and will be in close

proximity to existing driveways, utilities, and existing mature trees. Residents may object to the aesthetics of a new curb ramp as well as tree removal and/or utility relocations needed to construct the ramps. Regardless, with the existing stop condition, new ramps will need to be constructed on the north side and the ramps on the existing ramps on the south side will need to be reconstructed. The estimated cost to remove and replace the six existing deficient ADA ramps alone is \$54,000.



Highcroft Dr. and Chequer Dr.
(new ramp on north would conflict with utility)



Highcroft Dr. and Howehill Ct.
(new ramp on north would conflict with mature tree)



Highcroft Dr. and Heathercroft Dr.
(new ramp on north would conflict with driveway)

Second, I think it is important to clarify the impacts of the existing stop signs. If there were no stop signs on Highcroft Drive these would be conventional “T” intersections. Drivers entering Highcroft from one of these streets (Heathercroft / Howehill / Chequer) would have to stop in obedience to the existing “side street” stop signs prior to entering the intersection. Without the mainline stop signs, the City

could simply construct ADA compliant ramps on Highcroft and the intersection would be compliant. However, because of the stop signs on Highcroft, the intersection will not be compliant unless the ADA path across Highcroft is at a grade of two percent or less. The existing street grade at these intersections are approximately 1.6% at Howehill Ct., 3.8% at Chequer Dr. and 6.7% at Heathercroft Dr. This means that because of the stop signs two of the three intersections will need to be redesigned. Such a requirement may sound simple, but it is not easy to design and construct a vertical grade change on a roadway while maintaining a positive experience for a motorist. Accordingly, if the stop signs are to remain these three intersections will need to be designed with new vertical curves to accommodate a compliant ADA crosswalk. Due to the relatively close spacing of these intersections, this would likely warrant redesigning the entire street to ensure a smooth and positive roadway experience for drivers, pedestrians, and cyclists.

At this point, I think we need to make some decisions about the future of Highcroft Drive. Specifically:

- 1) *Should the City apply for a grant to reconstruct Highcroft Drive, or should we address Highcroft via slab replacement using Capital Projects funding?* My recommendation is that we leverage our existing funding to the greatest extent practical and apply for a grant. I simply cannot recommend that we forego a chance at saving upwards of \$1,000,000. This means that we will have to tolerate the deterioration of the roadway for a few years. This does NOT mean we will ignore the roadway. We will address any deficiencies in asphalt and make sure the road is safe and passable. That said, the appearance of the road may not meet resident expectations until such time as the road is reconstructed.
- 2) *Should the City reconsider the three existing stop signs on Highcroft Drive?* I am adamantly opposed to non-warranted stop signs and would favor the removal of these stop signs. However, once stop signs are installed it is very difficult from a political perspective to remove them. While stop signs should never be used to control speed, if these signs are removed, speeds may increase and it is likely that resident perception will be that speeds have increased whether data support it or not. I would much prefer to attempt to address the speeding issue with “bump ins” or other creative design components if supported by residents. That said, my opinion is that area residents will NOT want the stop signs removed, and I do NOT want to “push” a project that is not supported by area residents.
- 3) *Should the City design a project on Highcroft Drive using In-House Staff or a Consultant?* Because of the two answers above, I would recommend hiring a consultant to design improvements to Highcroft Drive. The City Staff is very capable of designing conventional slab replacement projects. In fact, we do it every year. That said, it would be very difficult for City Staff to design this roadway in such a manner that it will meet ADA standards at the three intersections while still providing a positive user experience for the motorist.

Additionally, the project will almost certainly require the acquisition of right of way and/or easements, which will require consultant services. Given the complexities of the project, I believe the use of a consultant will result in the best project. Based on the estimated project cost of \$1,480,000 consultant design services may be approximately \$222,000 in today's dollars (15% of the anticipated construction cost).

- 4) *Should the City consider other alterations and improvements to Highcroft Drive that may increase its performance-based grant score and therefore increase the likelihood of obtaining a grant through a public meeting(s) with impacted residents?* Prior to taking any action on the items above my recommendation is that the City engage residents to determine what type of roadway and roadway improvements would meet the resident's expectations. This resident engagement could take many different forms including but not limited to an open house in-person meeting, an online survey (similar to Wilson Avenue), trustee engagement, PPW presentation, or a combination of any of these. Recent City projects that offer a partial view of potential designs in Appalachian Trail Phase I (disconnected roadway drainage, extensive use of bump-ins), Greentrails Drive (similar to Appalachian Trail but less bump-ins, minimum necessary to meet stormwater quality requirements), and Appalachian Trail Phase II (remove and replace pavement same width with no bump-ins).

Action Recommended

The City of Chesterfield needs to begin looking at improving Highcroft Drive. Because Highcroft is a Minor Collector it qualifies for grant funding. This provides the City opportunities, but also presents a number of questions, as detailed above. After reviewing the matter at length, **I recommend that the City begin applying for grant funding for Highcroft Drive starting in 2023.** That grant application should include design services, right of way services, construction, and construction engineering. As part of the design, the City shall ensure ADA compliance at the existing stop-controlled intersections. Other improvements, including bump-ins, bike lanes, and pedestrian improvements at the school will be considered during the design phase, which will include a public input component. If it becomes apparent that it is unlikely that the City will be able to secure a grant to improve Highcroft Drive, then Highcroft shall be programmed into the City's CPP for slab replacement using Capital Projects funding. Until Highcroft Drive is improved it will be continuously maintained such that the roadway is safe, smooth, and passable.

This matter should be presented the Planning and Public Works Committee of City Council. I will prepare a presentation at the meeting showing additional details of Highcroft Drive. If PPW concurs with my recommendation, Highcroft Drive will be incorporated into the City's CPP as a grant project. If PPW prefers an alternate course of action, it should provide that direction to Staff. No action by the full City Council is necessary at this time.